

The Life Cycle of Government Information: Challenges of Electronic Innovation

1995 FLICC Forum on Federal Information Policies

March 24, 1995

Federal Library and Information Center Committee

Library of Congress

Washington DC 20540-4930

TABLE OF CONTENTS

About FLICC/FEDLINK

Previous Forums

Acknowledgements

1995 Forum Call

Introductory Remarks and Program Overview

Donald C. Curran, Associate Librarian for Constituent Services, Library of Congress, and Chair Designate, Federal Library and Information Center Committee
Hiram L. Davis, Deputy Librarian, Library of Congress

Vision Statement

Alvin and Heidi Toffler, Futurists and Authors of Future Shock, The Third Wave, Power Shift, and Creating a New Civilization: Politics of the Third Wave

New Mindset for a New Medium

Moderator, Jennifer Belton, Director of Information Services, The Washington Post

I. Library of Congress Digital Library

Suzanne Thorin, Chief of Staff, Office of the Librarian, Library of Congress

II. Digitizing Information and Committing to Electronic Systems

Panelists:

Daniel Atkins, Dean, School of Information and Library Studies, University of Michigan

Kenneth Thibodeau, Director, Center for Electronic Records, National Archives and Records Administration

Daniel Duncan, Vice President of Government Relations, Information Industry Association

Information Issues and Initiatives in the 104th Congress

Rep. Vern J. Ehlers (R-MI)

Leadership and Accountability

I. Exercising Control-The Telecommunications Experience

Moderator: Mike Mills, Telecommunications Reporter, The Washington Post

Panelists:

Gregory Simon, Chief Domestic Policy Advisor, Office of the Vice President

Lincoln Hoewing, Executive Director for External Relations, Bell Atlantic

Riley Temple, Attorney, Halprin, Temple & Goodman

II. Who Owns the Law?

Moderator: Robert Oakley, Director of the Law Library and Professor of Law, Georgetown University

Panelists:

William Lindberg, Manager, West Academic Programs, West Publishing Company
James P. Love, Director, Taxpayer Assets Program, Center for Study of Responsive Law
Paul Friedman, Deputy Associate Attorney General, Department of Justice

Wrap-Up

David Wilson, Assistant Editor, Chronicle of Higher Education

About FLICC - FEDLINK

The Federal Library and Information Center Committee (FLICC) was created in 1965 as the Federal Library Committee by joint action of the Library of Congress and the Bureau of the Budget (currently the Office of Management and Budget). FLICC is composed of the directors of the three national libraries-the Library of Congress, National Library of Medicine, and National Agricultural Library-and representatives of cabinet-level executive departments, legislative, judicial and independent federal agencies with major library programs. The Committee is chaired by the Librarian of Congress.

FLICC's purpose is to make federal library and information centers' resources more effective through professional development of employees, promotion of library and information services, and coordination of available resources. FLICC is also responsible for making recommendations on federal library and information policies, programs, and procedures to federal agencies and to others concerned with libraries and information centers.

FEDLINK is an interagency cooperative program sponsored by the Library of Congress and FLICC. FEDLINK offers any federal agency, through its library, information center, or other information-oriented office, the opportunity to enhance the information resources available to meet the requirements of its personnel.

Using FEDLINK service contracts, federal libraries, information centers, and other offices obtain services directly from commercial sources. These contracts usually provide substantial discounts not available to individual customers. For both large- and small-volume users, this approach secures favorable terms assuring lower costs. Through FEDLINK, agencies may obtain cost-effective access to a number of information or operations support services including: online reference databases from major commercial vendors, online cataloging and interlibrary loan services of bibliographic utilities, and ordering and publications control services of book jobbers and serials subscription agents.

The FEDLINK program for acquisition of information retrieval services operates under the Library of Congress' delegation of procurement authority granted from the General Services Administration. Arrangements to initiate and payment for these and other appropriate services are authorized by the Economy Act and are governed by interagency agreements executed by participating federal agencies and the Library of Congress, acting on behalf of FLICC.

In addition to providing cost-effective library bibliographic services and other library services and products, FLICC/FEDLINK has functioned as a center for evaluation and education about new library and information technologies.

For further information about our services, write FLICC, Library of Congress, Washington, DC 20540-5100; telephone the FEDLINK Fiscal Hotline, (202) 707-4900, fax (202) 707-4999; or send an electronic mail message via the Internet to fliccfo@loc.gov.

Susan M Tarr

FLICC Executive Director

Previous FLICC Forums

Emerging Issues on Managing Information Resources, February, 1984

The International Flow of Scientific and Technical Information, February 27, 1985

Their Implementation on Implications for Information Access, February 12, 1986

Views of a Concerned Community, February 25, 1987

The Impact on Competitiveness, March 7, 1988

The Congressional Initiative, March 22, 1989

Access is the Key, March 20, 1990

Building Information Superhighways: Supercomputing Networks and Libraries, February 15, 1991

The Future of Government Technology: Money, Management, and Technology, March 17, 1992

Government's Role in the Electronic Era: User Needs and Government's Response, March 25, 1993

Information's Roles in Reinventing Government: Delivery of Government Information, March 22, 1994

Acknowledgements

The annual FLICC Forums on Federal Information Policies are arranged under the auspices of the FLICC Education Working Group which was chaired in 1995 by Donald Fork, Department of Education. Each year, volunteers from the FLICC Education Working Group serve with the Ad Hoc FLICC Forum Planning Group which is composed of information experts. The Ad Hoc Working Group selects the Forum topic, identifies speakers, and helps to prepare the Forum program. FLICC wishes to express its appreciation to the FLICC Education Working Group, particularly to group members Donald Fork and Mona Smith, National Technical Information Service, Department of Commerce; Anne Heanue, American Library Association; Dr. Neal Kaske, U.S. Department of Education; Sandy Morton-Schwalb, Special Library Association; Robert Oakley, Georgetown University Law Library; Bruce Stein, National Security Agency; and to Library of Congress staff members: Jane Bortnick Griffith, Science Policy Research Division; Judith Farley, Financial Services Division; Catherine Jones and Lynne McCay, Congressional Reference Division; Stephen Kelley, Legislative Liaison Office; Karen Renninger, Serial and Government Publications Division; Harold Relyea, Congressional Research Division.

Summaries written by: Terrey Hatcher Quindlan

1995 FLICC Forum Call

The 1995 FLICC Forum on Federal Information Policies will examine the effects of technology on government information life cycles and suggest innovative ways to respond to new information realities.

A New Mindset for a New Medium

This session spotlights the Library of Congress Digital Library project as an example of how government and libraries can successfully respond to new demands to move between the worlds of print and electronic informa-

tion. Library representatives will describe the management and technical aspects of the project and explain how internal, government, and private resources were identified; how applications technologies are assessed; and how materials to digitize are identified. Representatives from publishing, academe, and the National Archives will elaborate on criteria for identifying and selecting materials that are ripe for the transition to electronic format. The copyright, distribution, maintenance, and preservation issues affecting digitization projects and original electronic publishing also will be addressed.

Leadership and Accountability

Government's responsibilities to provide leadership and require accountability are being redefined. To what extent should government lead, shape, and monitor the development and use of national information resources? Government already exerts influence through legislation, regulation, judicial decisions, and research and development funding programs. Its potential effect on the information industry, and perhaps on the nation's general embrace of electronic information, is significant. As the foremost collector and a distributor of information, the manner in which government handles its own information requirements has further impact. How can government respond to the serious questions regarding accessibility, relevance, integrity, and permanence of information that arise with the shift to an electronic or a combined electronic/print information environment? The Forum will examine three topics related to issues of leadership and accountability:

A representative from the 104th Congress will describe the importance of information policy in the new legislative agenda and address such questions as: "Will the government's operations move into the electronic mainstream?", and "How will the public and private sectors work together to develop information systems that support the common national good?"

The Forum will examine recent developments in telecommunications that impact the industry's role in providing the overall infrastructure and critical conduits for information and ideas that link computers and people. The world of legal information will be the touchstone for discussing the issues surrounding accountability for electronic information resources. Representatives from the courts, legal publishing, and law librarianship will debate questions of universal access, public vs. private interests, and data integrity and reliability in a panel titled, "Who Owns the Law?"

Introductory Remarks and Program Overview

Donald C. Curran, Associate Librarian for Constituent Services, Library of Congress, and Chair Designate, Federal Library and Information Center Committee

Hiram L. Davis, Deputy Librarian, Library of Congress

Donald C. Curran, Associate Librarian for Constituent Services, Library of Congress, and Chair Designate, Federal Library and Information Center Committee

As Curran welcomed participants to the 12th annual FLICC Forum on Federal Information Policies he explained that FLICC was created as the Federal Library Committee 30 years ago. This year, FLICC has continued working to meet the needs of the federal library and information center community, and has been instrumental in updating the classification standards for federal library positions. FLICC's cooperative network, FEDLINK, has saved member agencies more than \$12 million in discounts and contracting cost avoidance. Additionally, in FY94, FEDLINK Network Operations trained nearly one thousand federal librarians and library technicians nationwide. As FLICC faces the challenges ahead, a new leader, Executive Director Susan Tarr, is at the helm of the organization.

Hiram L. Davis, Deputy Librarian, Library of Congress

Davis explained that this Forum would focus on the effects of technology on government information life cycles and look at innovative ways to respond to the challenges of the new information reality. The Library of Congress has been steadily planning, testing and installing new technology to maintain, improve and expand its services to Congress and to the nation. Two major Library initiatives are the National Digital Library project and Thomas, the on-line public access system for congressional information. Thomas has handled more than 2 million transactions since its start in January 1995. Davis said that those recent projects have built on earlier library efforts to make bibliographic data and major exhibits available on the Internet and to digitize several collections through the American Memory Project.

Vision Statement

Alvin Toffler and Heidi Toffler,

Futurists and Authors

Publications include: Future Shock, The Third Wave, Power Shift, and Creating a New Civilization: Politics of the Third Wave

In their books, the Tofflers have identified three great eras in civilization: the agrarian revolution, the industrial revolution, and the current knowledge revolution. Alvin Toffler, whose wife Heidi joined him at the conclusion of his talk for a question and answer session, said the Third Wave began in the United States in the mid-1950s and has led to the demassification of society.

Technology has enabled areas such as mass production, mass consumption, mass media, mass entertainment and mass education to become more individualized. For example, technology lets manufacturers make production changes at the push of a button. That ability will evolve so that custom production becomes the form of the future. Television programming, which has evolved from three channels to 30 channels or more is another example of increased specialization. The information universe is becoming demassified, and variety in society also is increasing.

Computers are a prime example of the demassification movement. Decades ago, mainframe computers were run by “data priests” who supported the bureaucratization process. Then came the PC explosion and the dispersal of information power to 40 million desktops. Previously, the major factors of production were considered to be land, labor and capital. Now, the central factor of production has become knowledge. Toffler noted that we have an increasingly “super-symbolic society.” If you have the right information, you need less land, labor and capital to create your product. One of the major benefits of that development is that information can be shared as land could not. People can exchange information, and if they’re smart, create more of it.

Organizational structures also have changed as information has permeated to the lower ranks. Employees have become empowered through easier access to the information that they need to do their jobs. Firms have become electronic organisms, and processes and relationships have become more transient. A drawback, however, is that information becomes more perishable. It must be used quickly or it becomes useless.

Some earlier weaknesses in computer systems-inadequate interactivity, inadequate mobility, inadequate convertability, poor connectivity, the lack of intra-intelligent systems and the lack of extra-intelligent networks-have been overcome. With these changes, we are building a technological “mural system” for the planet. As a consequence of technological advances we are facing:

The death of geography: People can do anything, any place, any time. Manufacturers are dispersing production

and cities are becoming deconcentrated as people move to the suburbs.

The death of privacy: Besides the specter of "Big Brother" government, people are facing electronic surveillance by a corporate "Big Uncle."

The death of intellectual property: Text and images can be altered easily with computers (as footage from the movie "Forest Gump" proved.)

Recent change also make new levels of abstraction, new use of language, deeper specializations, cross-specializations, novel juxtapositions, deeper concepts of causality, more rarefied intellectual debates and more "what if" thinking possible. History is entering a new zone of geopolitical turbulence but we need to look to the tools and opportunities for improvement that the Third Wave is giving us. During the Third Wave, food production has grown and the percentage of illiteracy has declined. Members of society need to prepare themselves to survive the biggest wave in history by intelligently applying the tools of knowledge.

During the question-and-answer session, the Tofflers discussed the impact that the Third Wave might have on education. Heidi Toffler said that education needs to be further individualized. Alvin Toffler said that information, media and computers can make valuable changes in education as they enter homes and create more opportunities for education in a home environment.

New Mindset for a New Medium

Moderator: Jennifer Belton

Director of Information Services

The Washington Post

Before introducing the speakers for the two morning discussions, Belton talked about some issues that were closer to home. She explained that The Washington Post is struggling to create a new mindset for its reporters. Belton's information services staff has historically has done a great deal of research and fact-checking for reporters, but now many of the reporters' information tools are available on-line. The goal is to make Post reporters more information-independent. The theory is that they will broaden their journalism skills through the use of research skills.

Two tools the writers can use are on-line research databases and CD-ROM networks. For example, as the 1996 presidential election approaches, Belton is hoping to create a database for items related to the election stored on a CD-ROM. Post reporters on the road would be able to pop in a CD-ROM and check a candidate's previous stance on an issue.

Post reporters' computer-assisted journalism also depends on tools such as the National Technical Information Service's (NTIS's) FedWorld bulletin board system and the Internet. "When action occurs, we can't always be there like CNN," Belton said. But, for example, during the recent earthquake in Japan, a research librarian was able to gather comments from observers on the Internet immediately following the disaster

I. Library of Congress Digital Library

Suzanne Thorin

Chief of Staff, Office of the Librarian

Library of Congress

The Library of Congress now has more than 40 million records on the Internet, Thorin said, and is working on the Library's Digital Library Project. Digitization of the Library's collections will help meet the increasing demand for global access to information. Already, the Library has made all of its exhibits and some of its special collections available on the Internet. Examples include exhibits of The Dead Sea Scrolls, the Revelations of the Russian Archives, and The African-American Mosaic. Thomas, the Library's new legislative information system, provides the full text of bills and the oral and written discussion surrounding them.

The Library is involved in the administration's National Information Infrastructure (NII) program, the federal effort to promote the information superhighway. Although the Library is not in the business of building NII, it is interested in what cargo is carried on the information superhighway. The Library is, therefore, taking an active role in influencing decisions about NII content.

During a five-year test of the Library's American Memory Project, 210,000 images were digitized from more than 24 American history collections. American Memory was designed to bring the older hard-copy book culture into the electronic collections of the information age. Those electronic collections include prints, photos, motion pictures and sound recordings, and mark progress toward creating the Digital Library.

Library officials view the Digital Library as "vitamin enrichment" for schools. The Library wants to act as a benevolent supplier of electronic information to help both rich and poor to access the Library's treasures. As the Library works to create a National Digital Library, it is striving to add to the core content of information available via the Internet. For example, some documents related to Walt Whitman's work were recently recovered after being lost from the Library more than 50 years ago. Those works are being digitized and eventually will be available over the Internet, so scholars may study them.

Thorin explained that the digitization effort must be a cooperative one. Because the Library of Congress "can't do it alone." The goal is to digitize 5 million American history items from the Library of Congress and other sources by the year 2000. Library officials have requested \$15 million from Congress and are asking for \$30 million in contributions from the private sector. \$13 million already has been committed to the project by private contributors. Library staff envision a series of joint ventures, which give no one party exclusive rights to the digital works.

Thorin said that Librarian of Congress, Dr. James Billington, "is on fire" with the mission of making Library holdings available to all.

The Copyright Office is moving into the digital era as well and has set up a "testbed" to study electronic registration and storage of copyright submissions. But the routine acceptance of all copyright submissions electronically could be as far away as 10 years. As the Copyright Office moves towards electronic holdings, it is studying new ways to protect intellectual property rights as well.

The Library intends to be part of the strategic information reserve that will provide a foundation for NII. Without libraries and librarians, the gap between the information "haves" and "have-nots" will not be overcome. However, Thorin said, both traditional and electronic books will have a place in the future. Traditional books will continue to play a vital role in developing wisdom and creativity.

II. Digitizing Information and Committing to Electronic Systems

Panelists:

Daniel Atkins

Dean

School of Information and Library Studies

University of Michigan

Kenneth Thibodeau

Director

Center for Electronic Records

National Archives and Records Administration

Daniel Duncan
Vice President of Government Relations
Information Industry Association

Daniel Atkins

Referring to the subject of the panel discussions, "New Mindset for a New Medium," Atkins envisions a new mindset for:

the nature of future knowledge work environments and how to create them;
the education of new information systems and service professionals; and
the future of scholarly communication and universities.

Atkins said it is important to understand how computer technology will affect communication, collaboration, information resources and information dissemination, as well as the physical world. He explained that we are entering into a digital culture, and we need new methods to create, explore and manage that culture.

A key effects of advanced information systems and services will be how people use technology to work together and form knowledge unions or "collaboratories." The University of Michigan is building a collaboratory of space scientists around the world, to explore team science. As a dean and professor of electrical engineering and computer science at Michigan, Atkins explained that a group of students is setting up an Internet public library on the World Wide Web and establishing a coalition of reference librarians to work with it. (<http://ipl.sils.umich.edu/>.)

Academia needs to strive to explore visions of the future, an effort that will be molded by both social and technological forces. Technology will help shape organizations both big and small, centralized and decentralized, and local and global. Technology also is shaping home life. Atkins' figures showed that between 1988 and 1994, US household subscriptions to on-line information services rose from about 1 million to more than 5 million. Use of the World Wide Web has skyrocketed, from comprising less than one percent of Internet traffic in the spring of 1993 to about 18 percent in January 1995.

As the popularity of Internet services expands, so does the need for data storage. Atkins believes we are moving into the age of "terabytes" of storage. A terabyte of storage could hold each of the following:

300 million pages of text;
20 million pages of scanned documents;
1 million pages of scanned color images;
100,000 medical X-rays;
1800 hours of CD quality audio;
500 hours of good quality video; or
250 movies.

Information services will become more accessible as an information infrastructure is built. That infrastructure will develop from four interdependent parts:

a set of widely accessible and interoperable communication networks;
digital libraries, information databases and services;
easy-to-use information appliances and computer systems; and
trained people who can build, maintain and operate these resources.

When these entities are working together, the result will be distributed, media-rich information technology. In the future, digital libraries will be a hybrid world of information access. Media that once were separate-such

as paper, film and photographic collections-will be united in digital form. Digital libraries have the potential to provide information any time, any place; distribute new types of integrated, dynamic multimedia documents; support new forms of human collaboration for creating information; and provide new opportunities for harvesting, customizing, and personalizing information access.

The University of Michigan's School of Information and Library Studies has a mandate to educate knowledge resource management professionals for the 21st century, conduct interdisciplinary research and development, and act as a "skunk works," or testing ground, for the application of information technology to the knowledge mission of the university.

The school is one of six participants in the National Science Foundation's Digital Library Project and is looking forward to the creation of an open architecture for the National Digital Library Federation. That system architecture should be able to handle a wide variety of search engines, document types and user needs. It also should be able to grow with user needs and accommodate millions of collections and users.

In this digital age, all organizations need to find ways to explore innovations and stretch toward new ideas, as well as share those ideas with other members of the organization.

Kenneth Thibodeau

As organizations strive to digitize information, they face a clash between the past and the future. Thibodeau cited computer science guru Nicholas Negroponte of the Massachusetts Institute of Technology who has said that scanning is setting computing back by decades.

If an organization ends up with only scanned image instead of ASCII text, the computer cannot use its intelligence to process the information. However, scanning serves a purpose by enabling society to "catch up" and put the technology to use.

The push for digitization is a recognition of the importance of digital access. The National Archives and Records Administration (NARA) has a great deal of valuable knowledge to offer on the subject, having gained experience in retention management, preservation and access over more than 20 years, and is firmly committed to electronic systems.

The one thing people can count on is change, he said, which makes it all a little bit exciting and a little bit hopeless. If an organization believes it has found a definitive solution in one digital medium it is laying the foundation for failure. In the process of digitizing information, it is important to insure against the loss of accessibility due to technology obsolescence. Digital storage media have a long history of fragility, as well as obsolescence. Recent developments in these media have not eliminated the problems. Government officials should not fool themselves into believing that the government will drive corporate decisions about digital storage media. The government's demand for digital storage amounts to a three-day production run of magnetic media, according to Thibodeau.

With regard to specific media, magnetic tapes are fairly durable, but the manufacturer's batch number is the biggest deciding factor in tape preservation. Optical disks have been found to be highly reliable, but the first sign of optical disc failure tends to occur when the user is on the verge of a catastrophe. The keepers of data must plan for successive migrations of media and must look for stability and market penetration when selecting a medium. Government officials should not get locked into a system that fails to provide a migration path.

Daniel Duncan

The nation is in the midst of a revolution affecting the way information, including government-generated information, is delivered and used. Duncan explained that the Information Industry Association (IIA) believes it is time to reevaluate how the government will generate information products and services in the emerging NII and the global information infrastructures (GII). The association wants to ensure that the government does not delay or stifle the creation of useful, timely and accurate information products and services for either NII or GII.

The information infrastructure should provide for dual roles for government and the private sector. The government should create products and provide services only when they fall within the mission of the agency and do not present a burden on the taxpayer. The government traditionally has been the provider of last resort. Hardware and software development has increased the array of information services available to the public. Advanced digital distribution systems have made dissemination to a wider audience more feasible. At the same time, supporters of increased government information dissemination expect such services to be offered at little or no cost. Taxpayers' money should not go to agency efforts that are of limited or specialized interest.

The private sector's role traditionally has been to add value to government information and make a profit by doing so. The ability to make a profit should not be viewed as inherently evil. In a free society, it would be disastrous if the government were the only provider of information about itself. IIA has advocated certain principles that recently were incorporated into the Office of Management and Budget's (OMB's) Circular A-130.

The principles that could serve as a framework for government activities related to NII and GII include:

The government should have a role as an information provider, but it should not discriminate when setting costs or timing release of information.

When the government does disseminate information, it should distribute it in any form available, including electronic formats, and charge-at most-only the actual cost of dissemination.

The government should give adequate public notice when changing any of its information dissemination activities.

The Information Industry Association wants to ensure that no one upsets the balance between the roles of the government, the private sector and the public. If NII is to meet the expectations of its supporters, the organization must promote the creation of a variety of information products and services. That variety could be stifled by people who believe that all information should be free and that the government is the best and only provider of that information.

Information Issues and Initiatives in the 104th Congress

Rep. Vern J. Ehlers (R-MI)

Ehlers, a member of the House committee which oversees the Library of Congress, also is a nuclear physicist. He is not, however, a computer expert, he said. He does have experience overseeing libraries and computer systems on the local and state levels. Ehlers scanned a series of issues, touching on them in turn.

Ehlers described the role libraries could play in distributing electronic information. Libraries would provide an atmosphere conducive to public information terminals linked to the Internet or NII. Vice President Gore would like to have terminals at post offices, but "I think that's wrong," Ehlers said, explaining that he believes librarians are eager to help people but postal workers are not. Also, terminals offering electronic services would be competitors to the Postal Service, whose job is delivering paper mail.

When Ehlers came to Congress, House Speaker Newt Gingrich asked him to help get the new Republican majority set up with computers. The Michigan congressman had helped his own state Senate upgrade its computer

system. The House Information Systems staff “did a yeoman’s job,” and the House now has most of its documents on the Internet. The Library of Congress’ Thomas on-line congressional information system helps in that effort. The goal is to improve the House network and bring it into the 21st century. More than 100 congressmen are on the Internet, and many of the rest are resistant. Some members simply do not want to be on the Internet, because they feel they already get enough mail and enough headaches without adding e-mail to the mix. More than 300 House offices are connected to Internet, and the rest are slated to receive connections in the summer.

An issue that has caused its share of controversy, said Ehlers, is the Clipper Chip, designed for encrypting computer files. The White House supported the mandatory use of the Clipper Chip, because it would provide a back door for law enforcement authorities investigating crimes.

Also, the administration argued that US companies should not be allowed to export encryption technology that could be used against the US government. Ehlers thinks the mandated use of the Clipper Chip likely would inhibit technology and the development of software. He hopes that the push for the Clipper Chip will fade away.

Leadership and Accountability

I. Exercising Control - The Telecommunications Experiences

Moderator: Mike Mills

Telecommunications Reporter

The Washington Post

Panelists:

Gregory Simon

Chief Domestic Policy Advisor

Office of the Vice President

Lincoln Hoewing

Executive Director for External Relations

Bell Atlantic

Riley Temple

Attorney

Halprin, Temple & Goodman

Mike Mills

The consent decree that broke up AT&T 11 years ago has practically run its course, Mills said, and the patchwork of telecommunications law is essentially shifting from the courts to Congress. Mills believes that congress is eager to get control over the future of communications.

Surprisingly, information has become completely fungible. Voice, data and video communications mean the same thing to a network, because everything is “0s” and “1s”. Many people in policy circles were not expecting this leveling factor, but policy usually lags behind technology by at least a decade. This equality of information has a profound effect on the marketplace, because any company can enter into any other company’s business. Policy clearly needs to catch up with technology.

Greg Simon

In the history of the government's information, information always wins, Simon said, but "it's not always pretty." As historian James Burke observed, information has a life of its own and it cannot be predicted or controlled.

The Gutenberg printing press actually was a commercial venture, but it enabled people to get information less expensively, in their own languages. It also gave rise to individual professions, which started a whole new way of life for Americans. The American Revolution may have been the first protest against the lack of interactive communication_taxation without representation.

"It's no accident that the First Amendment was free speech," Simon said. The First Amendment should remind us all that our government is the result of burgeoning information, not of controlling information.

The government always has played a key role in expanding the means of communication. Information has been carried by the Pony Express, the telegraph, the interstate highway system, the transcontinental railroad, and now the information superhighway. In all these areas, the government's goal was to link the nation together, "not because we're in love with the infrastructure, but because we're in love with communication."

Americans always strive to communicate more quickly and more efficiently. Today, we want the kind of communication that will save lives in an instant instead of over the course of a week or two, and will allow for unrestricted, instantaneous communication. The government promotes policies to modernize the infrastructure and allow citizens better access to information, access to better information, and a better way to broadcast and 'narrowcast' their own information. It is not 500 channels to you that should be important in the new information infrastructure, said Simon_rather, it is one channel from each of you.

One of the "channels" coming from the White House is the White House Web server, which lets on-line visitors take virtual tours of the White House, other agencies and Congress. Several million people have logged on to the White House Web since its start. The administration is now dealing with the issue of telecommunications reform. Competition among information service, telephone service and cable service providers is the administration's major concern. The benefits of competition are lower prices, better choices and better services. According to Simon, "the best way to achieve that is to make sure the local telephone market is open to competition in reality, and not in theory." The administration wants to promote competition among cable providers so that monopoly pricing does not become a problem again.

Officials also want to protect the ability of states to help set the regulatory environment in their own geographic areas. Universal service is another goal. The Clinton administration would like to see every classroom, every library, and every hospital and clinic in the country linked to NII. Those linkages are in the public interest, the economic interest of the country, and in the interest of education and health. The NII is also an important way for public agencies to be able to give information to citizens and gather information from them. We are trying to make it as easy for people to file a document as it is to hit the 'enter' button on their computers.

NII supercedes any one administration or any one issue. When Vice President Gore was a senator, he worked on the research end of the NII with the High-Performance Communications and Computing Program and the National Research and Education Network, and Simon has worked along with him. The administration also has been working with the research and applications of the NII through National Telecommunications and Information Administration grants that are awarded to schools, libraries and other public institutions. These research programs help us understand and model global problems. Those programs have been under attack, said Simon, and we're going to defend them as hard as we can.

Beyond NII, Gore is actively working toward the global information infrastructure. Simon said the Vice President wants to ensure that we bring the world with us into the information age and not run away from it. The

administration also wants to use information to help other countries. If we can focus on the human face of this information infrastructure, we can move it forward. But if we focus too much on the technology, or helping one industry gain an advantage over another, then we will miss a great opportunity.

Link Hoewing

Hoewing spoke about Bell Atlantic's concept of future network services, problems standing in the way of its vision, and policy changes the company would like to see made.

Bell Atlantic is working on several ventures that extend beyond telephone service and into information management. It is participating in a joint venture with Pacific Telesis, Nynex and a Hollywood talent company to help produce programming and offer movie information to customers.

Technology is merging and crossing boundaries very easily. Bell Atlantic wants to enable customers to control and individualize information through technology that would allow them to request information by "pointing and clicking" on their television screens.

The "Stargazer" service will be offered to customers over a "video dialtone network," with plans to offer access to other providers at a tariffed rate established by the Federal Communications Commission (FCC). The network would include a range of information providers.

Video dialtone will take a while to appear as a full-fledged service, however. The company is planning a trial run in Northern Virginia this summer, which will let company officials study how customers use the system and what services users would like incorporated into it. In an earlier test with employees as users, Bell Atlantic found that users migrated from movies and entertainment to home improvement, health activities and education.

Hoewing said the first hurdle is testing the technology and letting customers adjust to using it. The second hurdle, he said, is the regulatory system. Cable service is regulated one way, and telephone service is treated differently—you still have the "Balkanization" of the regulatory industry—which makes it very difficult to get through the regulatory process and get these services on line.

The company has gone through a lengthy regulatory process to gain approval for the video dialtone trial. About 20 months ago, Bell Atlantic applied for certification from the FCC to build its commercial system. Approval for one commercial trial in Northern Virginia came a few weeks before the FLICC Forum. The trial allows Bell Atlantic to test the system with 2000 users and authorizes establishment of a 38,000 customer broad band network in Northern New Jersey.

The next stage will be to apply for a waiver to the FCC's Part 69 regulations, which could take months. If that is approved, the company can file a tariff, which could take many months as well. Admittedly, there are some tough issues, such as pricing, that the FCC has to examine. Hoewing described the regulatory process as "a major hurdle" for Bell Atlantic and believes some fundamental changes that are needed in the way the industry is regulated. Major reforms are needed at the FCC and state levels. Three major requirements apply to the changes Hoewing advocated:

Truly open markets: Bell companies and other network companies need to interconnect their networks so information services can be widely available to people. Once that is done, then competition ought to be allowed to occur.

Regulatory parity: when a telephone company and cable company offer the same services—the same kind of regulation ought to be applied.

Regulatory devolution: regulation ought to be brought down from the federal level to the state level. To the greatest extent possible, we ought to devolve a lot of this authority, and try to minimize economic regulations. Hoewing agreed with Simon that the government's role is to help expand information and to try to make it as widely available as possible. These regulatory changes are vital to achieving true competition and allowing Bell Atlantic to market these services as a trial and see what people really want.

Riley Temple

The day before the FLICC Forum, the Senate Commerce Committee passed a landmark telecommunications bill. Temple said that most people, particularly the Bell companies, want to see the legislation enacted. However, if the legislation fails, it will not be the end of the world, he said. It certainly will not be the end of the process by which public policy tries to keep up with technology.

History has shown that even if legislation is never enacted, public policy and telecommunications progress still occur. Technology has made that progress possible.

At the time of divestiture, the Bell companies were prohibited from manufacturing equipment, from providing information services and from getting into the long-distance business. Many people of "good minds and good intentions" believe those kinds of barriers should come down.

Conventional wisdom over the years has held that the 1934 Communications Act, which regulates the industry, is a dinosaur. But it still serves us very well because people have been willing to set public policy parameters through legislation, even when not enacted into law.

Ever since Congress got involved in the breakup of AT&T, its members have decided they would play a major role in how the new telecommunications structure would look. Some people were concerned that the divestiture would raise local rates because costs could not be underwritten by subsidies. Members of Congress wrote a letter to the judge in the divestiture case arguing that the Bell companies should be allowed to market customer premise equipment-telephones and other telecommunications devices, and print yellow pages. These sales could help subsidize local rates and keep them low. As a result, the recommendation was incorporated as part of the final Consent Decree.

Since 1984, the Bell companies have tried to have changes made to the AT&T Consent Decree. First AT&T went to the courts, but the judge considered AT&T's requests sparingly and granted them very slowly, if at all.

The Bell companies then worked hard to create congressional interest and they succeeded in getting members of Congress to introduce bills and hold hearings. They worked to build a consensus that the barriers to competition in the telecommunications industry were no longer appropriate. Temple stressed that the beauty of the telecommunications bill that the Senate committee just passed is that the bill will take down barriers to competition. But if the bill does not become law, it will not stop the march of progress.

II. Who Owns the Law?

Moderator: Robert Oakley

Director of the Law Library and Professor of Law

Georgetown University

Panelists: William Lindberg

Manager, West Academic Programs

West Publishing Company

James P. Love
Director, Taxpayer Assets Program
Center for Study of Responsive Law

Paul Friedman
Deputy Associate Attorney General
Department of Justice Robert Oakley

Oakley explained that the panel members would be commenting on the controversy that centers on the use of page number references in on-line information systems containing case law.

The controversy basically began about 20 years ago, when LEXIS complied with law librarians' requests to add page number references to the LEXIS-NEXIS on-line legal reference system. West Publishing Company-which published the case law books where the page numbers originated-sued, charging an infringement of its copyright. The court agreed that the wholesale use of page numbers did infringe on West's copyright. As a result, the decision gave West officials a significant amount of control over how lawyers refer to cases.

Since then, efforts have been made to overturn the decision legislatively and place page numbers in the public domain. Other efforts have centered on setting up a new method of citation that also would reside in the public domain.

The Department of Justice (DOJ) has its own role in the controversy, because it contracted with West to acquire West's database of opinions for DOJ's own research system known as JURIS. Another group, the Taxpayer Assets Project, discovered the existence of JURIS and argued that it was a database made up of public-domain material and was maintained primarily at the taxpayers' expense. They requested that the public-domain portion of the database be made available to the public.

Amid this controversy, West decided not to bid on the JURIS contract renewal option that was pending. West further claimed that its database should be returned under the terms of the original agreement.

DOJ then decided not to maintain its own internal database and to depend instead on outside research vendors. In response, tax analysts and other legal publishers sued the department under the Freedom of Information Act (FOIA) for release of the public portions of the database. Since then, some of that material has been released. The decision is still pending on the case law in the database.

These two controversies lead to questions about how much control a private company should have over access to public information and about the government's obligation to make sure the materials are readily available at affordable prices.

William Lindberg

In answer to the question and topic of the panel discussion, "Who owns the law?" Lindberg said that the people own the law_court opinions, statutes, and regulations. "West has never disputed this," Lindberg said. West supports the goal of accessible legal information. Working with state and federal courts, West and other legal publishers have created "a widely distributed, low cost paper system that makes the law available to everyone."¹ This network is, of course, now enhanced by high-end, sophisticated electronic services and access points.

A public/private sector partnership provides the best access to legal information. As Lindberg said, "I'm from the private sector . . . and I'm here to help you." Besides the public/private partnership, other partnerships, such as the sometimes uneasy but essential alliance between librarians and publishers,² also shapes information policy and access to legal information. Lindberg stressed that policies affecting electronic dissemination of legal information must preserve the print-based system. While West welcomes the Third Wave of high-tech information access described by Alvin and Heidi Toffler, most Americans are not yet "wired." Policymakers must not confuse aspirations with realities. New policies that make comprehensive print products economically unfeasible will exacerbate "information apartheid"-stratification of society into information "haves" and "have-nots".

"Case citations have become the flashpoint of stormy debate on access to legal information," Lindberg said. West permits anyone, from pro se litigant to legal publisher, to cite cases reported in West's CD-ROM, print, and online products. Critics of West's position as a primary source of case reports, however, claim that other publishers should be allowed to rip the spines off of West's books, scan all the text except for a few editorial features, and create competing legal information products. Obviously, West disagrees.

Court opinions as rendered by judges are in the public domain, as they should be. West believes that the cost to anyone of obtaining these opinions should be no greater than the marginal cost of dissemination. Of course, other legal publishers could more easily scan West's books than obtain original opinions from state and federal courts. It is always easier to copy than to create an original product. Federal law provides for copyright in factual compilations, and attempts to legislate away the compilation copyright have failed after careful consideration. Lindberg noted that the Constitution and the United States Code make copyright protection a keystone of American law.

Technological changes bring new ways to access information, but do not erase the need to protect intellectual property. Lindberg endorsed the principles of the National Information Infrastructure Advisory Council, whose first report emphasized that "adequate and effective protection of intellectual property is essential in order for the NII to develop successfully,"³ as Justice O'Connor states in the case of *Harper and Row Publishers, Inc. v. Nation Enterprises* 471U.S.539, 555 (1985).

It is fundamentally at odds with the scheme of copyright to accord lesser rights in those works that are of greatest importance to the public. Such a notion ignores the major premise of copyright and injures author and public alike...and as one commentator has noted: "If every volume that was in the public interest could be pirated away by a competing publisher,...the public [soon] would have nothing worth reading."

As do many other information providers, West adds value to raw government information, said Lindberg. West selects, coordinates, and arranges raw government information (in this instance, judicial opinions) to add significant value. In publishing its case report compilations, West:

- selects which opinions to report;
- selects which opinions to report in print, online, and/or CD-ROM format,
- compiles information such as party names; courts, judges, docket numbers, decision dates and text in its own original format that generally varies from the opinion;
- gathers and compiles selected additional information (such as regarding rehearings and counsel);
- creates and compiles original editorial features such as synopses, headnotes, topic classifications and Key Number classifications;
- corrects typographical and similar errors on its own;
- corrects substantive errors after consultation with the courts; and
- compiles selected alternative and parallel citations.

Stripping away copyright protection for West reporters would also remove most of West's incentive to add value in its case reports.

West does not object to alternate citation forms as long as they are optional [not exclusive]. A key reason for citations, however, is to point the reader toward a source where the accuracy of the cited information can be checked. A “neutral” citation that might refer to any particular publisher’s report of a court opinion would move questions of reliability, accuracy, authenticity, and data security to the center of the citation debate. For now, these significant questions remain unresolved.

Lindberg highlighted the distinction between “free information” and “information freely available.” Even putting every state and federal court opinion on the Internet would not improve access for those not rich enough to connect or skilled enough to retrieve relevant information once connected.

Any fundamental changes to our basic information policies should be examined carefully, so that changes or mandates do not undermine what has generated a highly effective and diverse array of information resources.

James Love

West publishes a premier product in the information industry and its books have been of great value to the legal profession, Love said. West Publishing will prosper in the information era even if it has to compete on a level playing field with other companies that offer innovative products. Now, West enjoys “a true monopoly” on access to case law at the federal and state levels, he said.

This issue about “Who owns the law?” hinges on who owns a century of case law at the federal and state level. West is the only publisher of comprehensive case law in paper format. There are many publishers who publish some case law. Only West Publishing publishes case law from all 50 states, and only West Publishing publishes case law from all the federal courts. Because of that, it is convenient for lawyers and judges to refer to West’s books of case law. The contents of those books are the result of a century’s worth of work by federal judges and state judges. The question is whether that work should be owned by West Publishing or be in the public domain. Should a computer publisher be able to take a book, scan the text into a computer, put it in a database and create a new product?

West not only claims a copyright to the page numbers, which are just page breaks, according to Love, but also in some instances, to the actual text in the cases. Furthermore, the JURIS case in particular is not about page numbers but about the text of the database.

Love referred to Oakley’s earlier statement that JURIS began as a way to access West’s legal information. That’s only partly true, because the government began digitizing case law in 1964 when the Air Force started the flight program. In 1971, DOJ established JURIS using the Air Force data, which was keyed in by government employees. Then in the mid-70s the Air Force gave the historical copy of its database to West.

In 1979, an executive order from President Jimmy Carter required DOJ to maintain databases of legal information and provide them throughout the federal government. That system was in place until the Clinton administration shut it down in January 1994. The government has many electronic dissemination activities that leave the courts out of the picture. Congress has its THOMAS, which receives a billion requests for data in 50 days. They discovered that ordinary people actually wanted to read the bills. Also, the Securities and Exchange Commission’s Electronic Data Gathering, Analysis and Retrieval System (EDGAR) receives 10,000 requests a day for files through New York University’s EDGAR access point.

Someone could go out and try to dig up all the old case law at all the old courthouses in the country, and try to get all the corrections. The text may or may not look the same as what is recorded in West’s books. “Let’s cut

to the chase here,” Love said. “What the public recognizes, what the courts recognize, what lawyers recognize, what everybody recognizes as the law is what is in the West National Recorder series.” But the authors of those decisions are judges, not West Publishing. The law should be more accessible to people. It should not cost \$4 or \$5 a minute to find out what your rights are. The courts need to make sure that there is a public-domain copy of the law available to everybody.

Paul Friedman

The Department of Justice does have a role in this unfolding drama, Friedman said, but the primary responsibility for developing an alternative public domain citation system or a public database of case law resides with the judicial branch of the government. West has done a superb, very high-quality job organizing and managing our country’s legal database.

When West decided not to continue maintaining the JURIS database for DOJ, a public-interest group sued DOJ for access to the case law database under FOIA. The plaintiff has announced that if it wins access to the data, it will make the information available to everyone on the Internet. The Department’s position is that an exception to FOIA applies because it had a contract with West that required the government to give the tapes back to West at the conclusion of the contract.

West’s claim of copyright to the interior pagination and text of the case law in its database is controversial. The suit by West Publishing against Mead was settled under seal. The copyright issue may be resolved in a pending case. DOJ employs almost 8,500 attorneys and more than 2,000 paralegals who need to use computerized legal research services. The Department has no plans to create its own comprehensive case law database that would compete with the private sector, nor does it plan to develop its own citation system. However, the Department would like to see the courts compile a database of their decisions, many of which now are posted on bulletin board systems but then erased as new ones are posted. The Department also supports efforts by others such as the American Association of Law Libraries to develop an alternative public citation system.

Also, there are reports that West sometimes gets slip opinions or corrections earlier than other recipients in some court districts. Friedman said that Justice officials will talk to the judges about ensuring a level playing field for all competitors.

Wrap Up

David Wilson

Assistant Editor

Chronicle of Higher Education

Many smart people are involved in creating new ways to disseminate information, said Wilson in his wrap-up of the 1995 FLICC Forum, but no one has the answers to the challenges of electronic innovation. He touched on some of the thought-provoking ideas he gleaned from listening to the day’s speakers.

When the telephone was introduced, futurists immediately realized its significance. At conferences all over the country, they praised the new technology, which, unlike the complicated telegraph, was easy to use and required only a few moments of training. In just a couple of years, most of them argued, Americans would get their news, entertainment, and education over the telephone. Someday, they all assured one another, every town in American would have one. A big city like Chicago would have dozens.

As the history of the telephone illustrates, trying to predict how new technologies will be used is hazardous at best. In the case of a technology as revolutionary as the Internet and its successors, it is fairly certain that our

theories about what Alvin Toffler calls “the economic, social, and cultural consequences” of this mature technology are going to be wrong more often than they are right.

“This does not mean that the effort to analyze and predict is not a noble one,” said Wilson. “All the speakers at this forum-with the notable exception of myself-have done an excellent job of outlining the questions we need to ask about this new technology. But even though they are all very smart people, my comrades have not produced a lot of answers to those questions. Well, you are not going to get any from me, either. In fact, I would urge you all to be deeply suspicious of anyone who claims to have the answers.”

With no government regulation_indeed, many say the technology cannot be regulated in the traditional sense_and a system of standards imposed only by the marketplace, the information infrastructure is evolving as rapidly as a colony of irradiated viruses.

While this lack of structure has helped the Internet develop new capabilities at a pace that borders on the “preternatural,” it is also the key factor preventing us from divining the future of the National Information Infrastructure. The people building and supporting the information highway have very different goals and aspirations. For instance, here is how Mr. Lincoln Hoewing presents Bell Atlantic’s perspective on the data highway: It is going to be a tool that people use to control information delivery. In his words, the system will “make information available on demand.”

Someday, you will be able to see any television episode, or film, or book, or magazine ever made by punching a few buttons and paying a small fee. Think of it as a really big VCR. There is an alternative vision of the data highway that is competing with that plan. This vision, as explained by Greg Simon of Vice President Al Gore’s staff, is based on the current Internet model. The Internet, in addition to letting people get information, lets people broadcast information. The Vice President declared in 1994 that the administration hopes to encourage development of a National Information Infrastructure that will “look and feel like the Internet,” to preserve that dual capability. But it is not at all clear how the administration plans to accomplish this goal with a political climate that frowns on interference with the free market, and a budget that will not allow it.

“To a large extent,” said Wilson, “the answers to a lot of the questions we have grappled with today will depend on which one of these competing visions is realized. This is probably the key issue that has been discussed here. While the other topics--copyright, access, and control--are all important, they pale in comparison with the question: How will this work?”

As A.J. Liebling wrote, freedom of the press belongs only to those who own one. NII has the potential to give a printing press, a radio station, an entire television channel, to anyone with a connection. But not if all you can do with the wire that comes into your home is send out a small request to see Citizen Kane again.

One final point. No one here today has addressed the topic of security in this medium. I would urge everyone whose task it is to develop ways of using these new technologies always to bear in mind the potential for mischief and outright harm that can be done by outsiders who can change your data. Tools like Gopher are notoriously easy to break into. Once entry is gained, the information you have so thoughtfully provided on-line can be changed. Think about how the information you wish to offer will be used, and imagine what would happen if it were tampered with.

I have poked fun at the people who 100 years ago predicted that we would use a telephone to get news, entertainment, and education. It is more than a little ironic that today, the Internet-which does provide us news, entertainment, and education-is based in no small measure on the wires that make up the telephone system. Just a decade ago, few would have made that prediction. Technology develops in completely unexpected ways, defying most attempts to anticipate how it will evolve.

When the Wright brothers launched their flimsy craft on its maiden flight, humanity realized a dream that can be traced back to the myth of Icarus, and likely has existed ever since one of our distant ancestors first glimpsed a bird. It was immediately obvious that the two bicycle mechanics had built something with the potential to revolutionize transportation. But it is a safe bet that nobody at that time gave any thought to the idea that jet aircraft would let diseases spread rapidly throughout the world. Technology has unintended consequences, and sometimes those are the consequences that turn out to be the most significant.

Just a few years ago, we were, in effect, standing on the sand at Kitty Hawk, trying to figure out what this infant technology we call the Internet would mean for us and our descendants. Now we are suddenly airborne, carried along by what may very well turn out to be the most massive technological undertaking in human history. It is really impossible to say where we are headed, or where we are going to land. But it is going to be one very interesting trip.

FOOTNOTES

Robert C. Berring, "On Not Throwing out the Baby," accepted for publication in the California Law Review, Spring, 1995 draft at p.6.

Patricia Glass Schuman, "Librarians and Publishers, An Uneasy Dance," Wilson Library Bulletin, December, 1994, p.40.

United States Advisory Council, National Information Infrastructure,"Common Ground: Fundamental Principles for the National Information Infrastructure," March , 1995, p.12.

